REMARKS

The Office Action in the above-identified application has been carefully considered and this amendment has been presented to place this application in condition for allowance. Accordingly, reexamination and reconsideration of this application are respectfully requested.

Claims 1–19, 21, 33–35, and 37 are in the present application. It is submitted that the claims, as originally presented, were patentably distinct over the prior art cited by the Examiner and are in full compliance with the requirements of 35 U.S.C. § 112. Changes to the claims, as presented herein, are not made for the purpose of patentability within the meaning of 35 U.S.C. sections 101, 102, 103 or 112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicant is entitled. Claim 20 is cancelled.

Attached hereto as an Appendix entitled "Version with Markings Showing Changes Made," is a marked-up version of the changes made to the claims by this Amendment.

Claims 4 and 11 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In accordance with the Examiner's comments, Applicants have amended claims 4 and 11 to delete the "such as" limitations from the claims. Therefore, Applicants believe this rejection has been overcome.

Applicants acknowledge with appreciation the indication by the Examiner that claim 37 is allowed and claims 14, 16, 20 and 21 would be allowable if rewritten in independent form

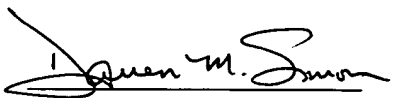
including all of the limitations of the base claim and any intervening claims. Independent claim 1 has been rewritten to include the limitations of cancelled allowable claim 20. Similarly, independent claims 33–35 have been rewritten to include the limitations of allowed claim 37. Accordingly, Applicants believes claims 1–19, 21, 33–35, and 37 should now be in condition for allowance.

In view of the foregoing amendment and remarks, it is respectfully submitted that the application as now presented is in condition for allowance. Early and favorable reconsideration of the application are respectfully requested.

An extension of time fee is deemed to be required for the filing of this amendment. No other fees are anticipated, but if such are, the Examiner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account No. 50-0320.

If any issues remain, or if the Examiner has any further suggestions, he/she is invited to call the undersigned at the telephone number provided below. The Examiner's consideration of this matter is gratefully acknowledged.

Respectfully submitted,
FROMMER LAWRENCE & HAUG LLP

By: 
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Appendix
Version with Markings Showing Changes Made

IN THE CLAIMS

Cancel claim 20.

Please amend claims 1, 4, 11, 13, 15, 16, 17, 19, and 33–35 as follows:

—1. (amended) A charging system for a mobile robot comprising the mobile robot that is battery-driven and moves in a self-controlled way within a work space, and a charging station for accommodating the mobile robot for a battery charging operation, the mobile robot being of the four-footed type which quadrupedally walks like a dog and has a power connector on the abdomen of a torso unit thereof, the charging system comprising:

a concave receptacle with a power connector on the inner bottom portion of the receptacle; wherein the receptacle supports the mobile robot in a lying down position;

visible recognition data arranged in a predetermined location of the charging station;

image pickup means mounted on the mobile robot;

calculating means for calculating a range and a bearing from the mobile robot to the charging station, based on an image picked up by the image pickup means; and

searching means for causing the mobile robot to search for the charging station, based on the calculation result provided by the calculating means.—

—4. (amended) A charging system according to claim 1, wherein the visible recognition data is formed on a print medium, and a plurality of print media is glued onto the surface of a three-dimensional object[, such a s a cylinder, a quadratic prism, or a sphere].—

—11. (amended) A charging system according to claim 1, wherein at least one of the charging station and the mobile robot comprises an indicator indicating the condition of a battery[, such as "Now charging", "Charging complete (with a battery fully charged)", or "Abnormal charging"].—

—13. (amended) A charging system according to claim 12, wherein the wave transmitted by the transmitter means is easily discriminated and separated from other signals created within the work space.—

—15. (amended) A charging system according to claim 12, wherein the transmitter means transmits at least two signal waves, from among light ray, infrared ray, sound wave, ultrasonic wave, radio wave, and magnetic field, and the receiver means switches the received signal in response to the range between the charging station and the mobile robot.—

—16. (amended) A charging system according to claim 12, wherein the transmitter means projects light ray through a slit, and changes the pattern of the slit depending on the direction of light projection.—

—17. (amended) A charging system according to claim 12, wherein the transmitter means transmits at least two signal waves that are different in output intensity and frequency component.—

—19. (amended) A charging system according to claim 12, wherein the transmitter means transmits is arranged external to the charging station.—

—33. (amended) A method for searching for a charging station, based on a signal wave transmitted by a transmitter arranged external to the charging station in a charging system comprising a mobile robot that is battery-driven and moves in a self-controlled way within a work space, and the charging station for accommodating the mobile robot for a battery charging operation, the mobile robot being ambulatory and having at least a torso unit and at least two foot units, comprising an electrode terminal for power feeding, on one of the abdomen of the torso unit and the back of the torso unit, the method comprising the steps of:

teaching the position of the charging station based on the signal wave from the transmitter after the mobile robot has been placed on the charging station, and

searching for the charging station by calculating the range and bearing to the charging station, based on the signal wave from the transmitter, with the mobile robot at any position within the work space.—

—34. (amended) A method for searching for a charging station, based on a signal wave transmitted by a transmitter arranged external to the charging station in a charging system comprising a mobile robot that is battery-driven and moves in a self-controlled way within a work space, and the charging station for accommodating the mobile robot for a battery charging operation, the mobile robot being ambulatory and having at least a torso unit and at least two foot units, comprising an electrode terminal for power feeding, on one of the abdomen of the torso unit and the back of the torso unit, the method comprising the steps of:

storing beforehand, in a memory of the mobile robot, the position information of the charging station with respect to a reference position set in accordance with the position of the transmitter, and

searching for the charging station by calculating the position of the mobile robot with respect to the reference position, based on the signal wave from the transmitter with the mobile robot at any position within the work space, and reading the position information from the memory to calculate the range and the bearing to the charging station.—

—35. (amended) A method for searching for a charging station, based on a signal wave transmitted by a transmitter arranged external to the charging station in a charging system comprising a mobile robot that is battery-driven and moves in a self-controlled way within a work space, and the charging station for accommodating the mobile robot for a battery charging operation, the mobile robot being ambulatory and having at least a torso unit and at least two foot units, comprising an electrode terminal for power feeding, on one of the abdomen of the torso unit and the back of the torso unit, the method comprising:

[the] a calculating step in which the mobile robot calculates the position thereof with respect to [the] a reference position set in accordance with the position of the transmitter, based on the signal wave from the transmitter,

in the calculating step [in which] the charging station calculates the position thereof with respect to the reference position, based on the signal wave from the transmitter,

[the] a communication step in which the charging station communicates the position information thereof to the mobile robot, and

[the] a searching step in which the mobile robot searches for the charging station by calculating the range and bearing to the charging station through a relative relationship between the position[al] information.—